

BDTF Final Deliverables – January 2018

Findings (7) / Recommendations (11) and associated source documents

Finding 1: Educating Early Career Scientists in Data Science Approaches to NASA’s Science Analysis Problems through NASA’s Frontier Development Lab

Finding 2: SMD Data Archive Programs and Projects Performing Well and are Properly Taking Steps to Modernize (also see source doc 1: Are SMD’s Science Data Archives Ready to Meet Future Challenges)

Finding 3: The Fraction of Science Papers that Rely on Archive Data Increasing in All Divisions (also see source doc 1: Are SMD’s Science Data Archives Ready to Meet Future Challenges)

Finding 4: Volume, Variety and Velocity of NASA Science Data is Taxing Established Methods and Technologies (also see source doc 2: Data Science: Statistical and Computational Methodology for NASA’s Big Data in Science White Paper)

Finding 5: Strides in Methodology Often Not Incorporated into NASA Satellite Data or Science Analysis Programs (also see source doc 2: Data Science: Statistical and Computational Methodology for NASA’s Big Data in Science White Paper)

Finding 6: Modeling Workflows Largely Ad Hoc and Little Changed from When Conceived (also see source doc 3: Modeling Workflows White Paper)

Finding 7: Mismatch Between Preparation of Scientists and Requirements for IT Mastery (also see source doc 3: Modeling Workflows White Paper)

Rec 1: SMD Should Manage its Data Archives at Same Rank as the Flight Missions in its Portfolio (also see source doc 1: Are SMD’s Science Data Archives Ready to Meet Future Challenges)

Rec 2: Incorporate Data Science and Computing Advisory Positions in the SMD Advisory Committees

Rec 3: Establishing a Data Science and Computing Division in SMD

Rec 4: Necessary Changes in Training, Proposal and Mission Reviews, and Implementation of the Critical Capabilities that Data Science Algorithms Provide (also see source doc 2: Data Science: Statistical and Computational Methodology for NASA’s Big Data in Science White Paper)

Rec 5: Making NASA's Archived Science Data More Usable and Accessible (also see source doc 4: Making NASA's Archived Science Data More Usable White Paper)

Rec 6: NASA Should Make Prioritized Investments in Computing and Analysis Hardware, Workflow Software and Education and Training to Accelerate Modeling Workflows (also see source doc 3: Modeling Workflows White Paper)

Rec 7: Implementing Server-side Analytics Architectures (also see source doc 5: Server-Side Analytics White Paper)

Rec 8: NASA Participation in DOE's Exascale Computer Program

Rec 9: Joining the Nation's Science Data Superhighway (also see source doc 6: Joining the Science Data Highway)

Rec 10: Joint Program with NSF's Big Data Innovation Regional Hubs and Spokes

Rec 11: SMD Data Science Applications Program Position and Directed Funding